How to Collect Pertussis Specimens

The gold standard for pertussis testing is nasopharyngeal culture. However, *Bordetella pertussis* can be difficult to culture and the results can take seven to fourteen days. Polymerase chain reaction (PCR), which identifies the genetic material of *B. pertussis*, has a much quicker turn-around time and is a reliable diagnostic method. Direct fluorescent antibody (DFA) has largely been abandoned as a rapid diagnostic method. Pertussis serologies are unreliable and difficult to interpret for timely clinical decision-making and public health follow-up, so serology is not recommended.

PCR is available through all local and regional laboratories. PCR is quite expensive, but testing through the Washington State Public Health lab is usually available at no charge for uninsured patients of high public health importance (healthcare or daycare workers; infants; pregnant women). Call Tacoma-Pierce County Health Department, Communicable Disease Control at (253) 798-6410 to request authorization for public health lab services.

Procedure for Collection of Nasopharyngeal Specimens

- Collect posterior nasopharyngeal specimens as soon as possible after symptoms develop. Specimens may be collected up to four weeks after onset of cough.
- Don mask and eye protection to prevent exposure during the specimen collection process.
- Obtain assistance from a second person to aid in specimen collection from pediatric patients. The patient must be kept still during the procedure to avoid injuring the patient or obtaining a contaminated specimen. One person should hold the patients arms and steady the chest so the patient does not roll.
- The patient’s head should be tilted backward slightly (see graphic).
- Have the patient blow their nose to clear excess mucus. For infants and young children, clean the anterior nares with moist swabs. Excess mucus on the diagnostic swab may result in equivocal or indeterminate results.
- Use a Dacron® or rayon swab on a flexible wire shaft to collect a nasopharyngeal specimen. Do not use wooden shafted swabs or Calcium alginate swabs (contraindicated for PCR testing). While the swab is still in the paper package, slightly bend the wire shaft about one centimeter above the tip to aid in getting the tip into the nasopharynx.
- “Piggyback” two swabs together if a specimen is needed for both culture and PCR. This saves the patient the discomfort of being swabbed twice. To avoid contamination, slip a second swab inside the other’s paper package to manipulate the swabs together.
- Gently pass swab(s) through the nostril to the posterior nasopharynx. *DO NOT* force. Resistance will be felt when the posterior nasopharynx is reached.
- Rotate the swab(s) and ideally leave in place for 10 seconds or until the patient coughs.
- For culture, aseptically streak one nasopharyngeal swab onto Reagan-Lowe or charcoal transport media. Leave the swab on top of the media. Do not stab the swab into the charcoal slant. Cut the top of the wire with scissors so the cap of the media tub can be screwed on. Bending the wire into the tube can introduce contamination (skin flora) into the media.
- For PCR, place another swab into a dry, sterile screw top transport tube for PCR. Ship specimens at ambient temperature.

To mitigate transmission of the disease to others, cases with a moderate to high degree of clinical suspicion should be treated with an approved antibiotic pending test results.